

IN THE SPECIFICATION

Please replace the paragraph beginning at page 1, line 24, with the following rewritten paragraph:

The optical scanning device 40 causes a light beam 42 emitted from a laser light source 41 to be incident on a polygon mirror 47 rotating at high speed through a first optical system 46 consisting of a coupling lens 43, a diaphragm 44 and a line-image forming optical system 45, and causes the light beam to be reflected by a mirror surface 47a of the polygon mirror 47, the angle of which surface changes with the rotation of the polygon mirror 47. Thereby, the light beam 42 is deflected in the main scanning direction, and, thus, performs scanning repeatedly.

Please replace the paragraph beginning at page 4, line 2, with the following rewritten paragraph:

Recently, as an image output speed is increased, a the driving speed of a deflector of an optical scanning device is increased. Thereby, a the amount of heat amount generated by the motor of the deflector increases. Accordingly, it becomes ~~not possible impossible~~ to ignore the influence thereof on other optical components (a light source, a coupling lens, a diaphragm, a line-image forming optical system, an f θ lens, a long-dimension lens, and so forth) contained in a housing of the optical scanning device together with the deflector.

Please replace the paragraph beginning at page 4, line 12, with the following rewritten paragraph:

Heat generated by the motor is transmitted to the respective optical components mainly through the housing. Thereby, the respective optical components are heated, and, ~~thereby accordingly~~, problems may occur such as a shift of ~~image image~~ position (focus

shift), thickening of light beam, error of writing magnification, and so forth. As a result, image quality may be degraded.

Please replace the paragraph beginning at page 4, line 19, with the following rewritten paragraph:

Further, as ~~a~~the driving speed of a deflector is increased, a vibration generated thereby when the deflector is driven ~~has come to be~~ is not able to be ~~capable of being~~ ignored. Accordingly, it has ~~come to be not possible~~ become impossible to use a plastic as a housing of an optical scanning device, and a metal housing has ~~come to be employed now~~ therefor been employed. Because metal has a heat conductivity larger than that of plastic, heat from a motor of a deflector comes to be more easily transmitted by the housing. As a result, other respective optical components come to be affected by the heat from the motor of the deflector more seriously. Accordingly, the above-mentioned problems occur more remarkably.

Please replace the paragraph beginning at page 5, line 7, with the following rewritten paragraph:

Further, recently, lenses and/or mirrors which are main components of optical systems of an optical scanning device ~~come to be~~ have been made ~~by of~~ plastic, and are made to have spherical surfaces so that both high performance and a low ~~costs~~ cost of the device ~~come to be~~ has resulted directed.

Please replace the paragraph beginning at page 5, line 12, with the following rewritten paragraph:

However, because plastic-made components are not superior in heat-resistant property in comparison ~~to~~ with glass-made components, lenses and mirrors which are main components of optical systems are more seriously affected by heat from a motor.

Please replace the paragraph beginning at page 5, line 17, with the following rewritten paragraph:

Accordingly, the above-mentioned problems have occurred ~~occur more remarkably~~ often.

Please replace the paragraph beginning at page 5, line 22, with the following rewritten paragraph:

According to Japanese Laid-Open Patent Application No. 7-244249, a scanning lens is separated from other optical components (mainly a deflector) in a housing, and, thereby, ~~shift~~ shifting of the scanning position and a change of diameter of light beam occurring due to shake of air surrounding the scanning lens are prevented. This technique is directed to eliminate the influence of ~~shake of air~~ disturbances (air flow generated by the deflector) around the deflector due to rotation of a mirror of the deflector, basically.

Please replace the paragraph beginning at page 6, line 17, with the following rewritten paragraph:

As a result, in the housing, some optical components are affected by heat from the deflector, and the other optical components are not. Generally speaking, in order to prevent the characteristics of respective optical components included in a optical system from shifting unevenly, the design is ~~made~~ such that the entirety of the optical system is in a uniform temperature environment, and, when the temperature environment changes, the system can be

corrected as a whole. Accordingly, when some optical components are in a different temperature environment, a design for correction with respect to environment change becomes difficult to obtain.

Please replace the paragraph beginning at page 7, line 6, with the following rewritten paragraph:

The present invention has been devised in consideration of the above-mentioned problems, and, an object of the present invention is to provide an ~~optical~~ optical scanning device using a mechanical deflector employing a polygon mirror or a galvano-mirror in which heat generated by the mechanical deflector is ~~made to be not~~ prevented from being easily transmitted to other optical components contained in a housing together with the mechanical deflector, and, thereby, stable optical scanning without fluctuation due to temperature can be performed.

Please replace the paragraph beginning at page 7, line 17, with the following rewritten paragraph:

An optical scanning device according to the present invention directs a light beam emitted from a light source to a mirror of a mechanical deflector through a first optical system, deflects the light beam in a main scanning direction by causing the light beam to be reflected by a mirror surface of the mirror, the angle of the mirror surface changing due to rotation of the mirror, and directs the deflected light beam through a second optical system to a surface to be scanned moving in a sub-scanning direction, the light source, first optical system, mechanical deflector and second optical system being contained in a housing. The mechanical deflector is held in the housing through a holding member, and, also, the

composition of the material of the housing is different in heat conductivity from the holding member.

Please replace the paragraph beginning at page 8, line 7, with the following rewritten paragraph:

Thereby, it is hard for heat generated by the mechanical deflector to be transmitted to the housing. Accordingly, it is possible to prevent the other optical components contained in the housing together with the mechanical deflector from being heated, and to prevent the performance of the optical scanning device from being degraded due to a rise in temperature ~~rise~~ of those optical components.

Please replace the paragraph beginning at page 8, line 19, with the following rewritten paragraph:

Thereby, it is head for heat generated by the mechanical deflector to be transmitted to the housing. Accordingly, it is possible to more effectively prevent the other optical components contained in the housing together with the mechanical deflector from being heated, and to prevent the performance of the optical scanning device from being degraded due to a rise in temperature ~~rise~~ of these optical components.

Please replace the paragraph beginning at page 9, line 2, with the following rewritten paragraph:

An optical scanning device according to another aspect of the present invention directs a light beam emitted from a light source to a mirror of a mechanical deflector through a first optical system, deflects the light beam in a main scanning direction by causing the light beam to be reflected by a mirror surface of the mirror, the angle of the mirror surface

changing due to rotation of the mirror, and directs the deflected light beam through a second optical system to a surface to be scanned moving in a sub-scanning direction, the light source, first optical system, mechanical deflector and second optical system being contained in a housing. The mechanical deflector is directly mounted to the housing and, ~~also in addition,~~ the material of the housing has a heat conductivity value smaller than that of a part of the mechanical deflector in contact with the housing.

Please replace the paragraph beginning at page 9, line 19, with the following rewritten paragraph:

Thereby, it is hard for heat generated by the mechanical deflector to be transmitted to the housing. Accordingly, it is possible to prevent the other optical components contained in the housing together with the mechanical deflector from being heated, and to prevent the performance of the optical scanning device from being degraded due to a rise in temperature ~~rise~~ of those optical components.

Please replace the paragraph beginning at page 10, line 6, with the following rewritten paragraph:

Thereby, it is possible to prevent temperature rise of the other optical components due to convection of heated air, and, ~~thereby~~ thus, to prevent the performance of the optical scanning device from being degraded. Further, because an air flow occurring due to rotation of the mirror is prevented from reaching the other optical components, a shift of in the scanning position, a change of in diameter of light beam and so forth occurring due to shake of air in the proximity of those optical components can be prevented.

Please replace the paragraph beginning at page 12, line 6, with the following rewritten paragraph:

In the accompanying figures, the same reference numerals are given to the same parts/components, ~~and a~~ duplicated description of which is omitted.

Please replace the paragraph beginning at page 12, line 10, with the following rewritten paragraph:

FIG. 2A shows a plan view (in a state in which a cover 20B is removed from a housing body 20A) of a first embodiment of an optical scanning device according to the present invention, and FIG. 2B shows a side elevational sectional view of the optical scanning device shown in FIG. 2A.

Please replace the paragraph beginning at page 15, line 13, with the following rewritten paragraph:

Further, a synchronization detecting system 30 is provided. The synchronization detecting system 30 includes a synchronization sensor 31, ~~and an~~ imaging component 32 and a mirror 33 which direct the reflected light flux from the polygon scanner 8 to the synchronization sensor 31.

Please replace the paragraph beginning at page 15, last line, with the following rewritten paragraph:

FIG. 3 shows a graph of a temperature rise amount (a rise in the amount from the temperature at the start of measurement) of a motor case 16a with respect to a motor speed in a case where the polygon scanner 8 is measured solely.

Please replace the paragraph beginning at page 16, last line, with the following rewritten paragraph:

According to the first embodiment of the present invention, the housing body 20A and a holding member 23 which holds the polygon scanner 8 are made to be separate parts, and the polygon scanner 8 is held in the housing 20 through the holding member 23. The material of the housing 20 is made to be different in terms of heat conductivity from the material of the holding member 23. Thereby, the bottom plate 20Aa of the housing body 20A is separated from the polygon scanner 6 and, as a result, heat generated by the polygon scanner 8 is not easily transmitted to the housing body 20A.

Please replace the paragraph beginning at page 19, line 8, with the following rewritten paragraph:

Accordingly, in a case where the polygon scanner 8 is directly mounted to the housing body 20A, heat from the polygon scanner 8 is not easily transmitted to the housing 20 when the heat conductivity of the housing body 20A is smaller than the heat conductivities of the motor case 16a and mounting plate 8a. As a result, it is possible to effectively prevent a rise in temperature ~~rise~~ of the other respective optical components, and to prevent the performance of the optical scanning device 1 from being degraded.

Please replace the paragraph beginning at page 19, line 18, with the following rewritten paragraph:

Thus, by ~~causing~~ preventing the heat generated by the polygon scanner 8 ~~to be not~~ from being easily transmitted to the housing body 20A, it is possible to prevent the other optical components in the housing 20 from being heated due to heat conduction through the housing body 20A.

Please replace the paragraph beginning at page 19, line 23, with the following rewritten paragraph:

However, when the polygon mirror 9 rotates at high speed, the surrounding air is stirred, and, thereby, convection of air occurs. As a result, heated air surrounding the motor 16 reaches the proximity of the other optical components through the air convection, and, the other optical components are heated thereby.

Please replace the paragraph beginning at page 20, line 4, with the following rewritten paragraph:

In order to prevent air convection due to rotation of the polygon mirror 9 from occurring, it is preferable to cover the polygon mirror 9 of the polygon scanner 8 by a cover 26 having an optical window 25, as shown in FIG. 6, as in a fourth embodiment of the present invention. Thereby, it is possible to keep ~~an~~ the air flow occurring due to rotation of the polygon mirror 9 within the cover 26.

Please replace the paragraph beginning at page 20, line 12, with the following rewritten paragraph:

As a result of the cover 26 being spatially separating the polygon mirror 9 from the other optical components, when air surrounding the polygon mirror 9 is stirred, influence thereof is prevented from extending to the outside of the cover 26. Accordingly, a rise in temperature ~~rise~~ of the other optical components by heated air is prevented. Further, because an air flow occurring due to rotation of the polygon mirror 9 does not reach the proximity of the $f\theta$ lens 10, long-dimension lens 11, turning mirror 12 and so forth, a shift of ~~in~~ scanning position, a change of ~~in the~~ diameter of light beam and so forth can be prevented occurring

due to ~~shake of air~~ currents being generated in the proximity of those optical components ~~can~~
~~be prevented.~~

Please replace the paragraph beginning at page 20, last line, with the following
rewritten paragraph:

According to a fifth embodiment of the present invention, by positively cooling the
motor case 16a or the holding member 23 of the polygon scanner 8 by a cooling part 27 as
shown in FIG. 7, it is possible to lower the temperature of the polygon scanner 8 itself which
is wheat source, or the holding member 23. Thereby, it is possible to prevent the housing 20
and air in the housing 20 from being heated by heat from the polygon scanner 8, and to
prevent a rise in temperature ~~rise of~~ the other optical components.

Please replace the paragraph beginning at page 21, line 12, with the following
rewritten paragraph:

However, when the cooling fan is used as the cooling part 27, it is preferable that the
outer surface of the motor case 16a which is a heat source, or the like is forcibly cooled from
the outside of the housing 20 in order to prevent air convection from occurring inside ~~of~~ the
housing 20.